Canada Alberta

FOREST RESOURCE DEVELOPMENT AGREEMENT
ENTENTE SUR LA MISE EN VALEUR DES RESSOURCES FORESTIERES

Canada Alberta

89-04360/

The Canada-Alberta Forest Resource Development Agreement is a subsidiary agreement of the Canada-Alberta Economic and Regional Development Agreement, which provides coordination and cooperation between the governments of Alberta and Canada in areas of Alberta's economic development.

The Canada-Alberta Forest Resource Development Agreement is funded equally by the governments of Canada and Alberta, from April 1, 1984, to March 31, 1989.

Its primary objectives are to ensure the long-term availability of timber supplies; to optimize timber uses; and to contribute to the growth and diversification of Alberta's economy.

The Agreement comprises three programs: Reforestation; Applied research, technology transfer and opportunity identification; and Public information, evaluation and administration. These programs are managed by a joint Directorate and are implemented by the Canadian Forestry Service and the Alberta Forest Service.

L'Entente Canada-Alberta sur la mise en valeur des ressources forestières est auxiliaire à l'Entente Canada-Alberta sur le développement économique et régional, qui vise à assurer la coordination et la coopération des deux gouvernements relativement au développement économique de l'Alberta.

L'Entente Canada-Alberta sur la mise en valeur des ressources forestières est financée à parts égales par les gouvernements du Canada et de l'Alberta, et a cours du 1er avril 1984 au 31 mars 1989.

Ses objectifs principaux sont assurer la disponibilité à long terme de réserves de bois; optimiser leur utilisation; et contribuer à la croissance et la diversification de l'économie de la province.

L'Entente comprend trois programmes: Reboisement; Recherche appliquée, transferts de connaissances techniques et relevé des occasions; et Information, évaluation et administration. Ces programmes sont gérés par un Bureau de direction conjoint, et mis en oeuvre par le Service canadien des forêts et le Service forestier de l'Alberta.

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MPC

MICROCOMPUTER PSP CATALOGUE SYSTEM

USER'S MANUAL

RELEASE 2 - 1988

DEVELOPED FOR:

NORTHERN FORESTRY CENTRE

DEVELOPED BY:

SILVACOM LTD.
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EDMONTON, ALBERTA
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Disclaimer

The study on which this report is based was funded under the Canada-Alberta Forest Resource Development Agreement.

The views, conclusions and recommendations are those of the authors. The exclusion of certain manufactured products does not necessarily imply disapproval nor does the mention of other products necessarily imply endorsement by the Canadian Forestry Service or the Alberta Forestry Service.

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ISBN 0-662-15676-5

Catalogue No. Fo 42-91/18-1987E

Additional copies of this publication are available at no charge from:

Regional Development
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Summary

The Microcomputer PSP Catalogue (MPC) is a data-base management system that contains the header information from permanent sample plots contributed by participating agencies and companies. Information contained within the catalogue system includes the following:

- Geographical location (province, UTM or township/range/meridian coordinates)
- Administrative information (owner, project number, location of the data, plot status, plot area)
- Type of information (measurement units, minimum dbh tally, data resolution)
- Site attributes (aspect, slope, elevation, site quality)
- Stand conditions (composition of primary and secondary species)
- Dates of establishment and remeasurement
- Treatment types and dates of application
- Reference material on related publication(s)
- Comments related to measurement methods, quality control etc.

MPC is designed to allow easy access to this archived information for purposes of editing and updating, as well as for the input of new PSP catalogue data. Numerous facilities for file management and printing are incorporated in the software.

Most importantly, MPC is a flexible, easy-to-use tool for interrogating the data-base. The user simply formulates an inquiry by specifying search criteria. The program will then locate records within the data-base that meet these criteria, and will display this information on the screen or printer, or will generate reports that can be stored in permanent disk files.

MPC is designed to operate on IBM PC microcomputers and compatibles equipped with hard disk drive(s). The software is "user-friendly" - the program is run through the use of screen menus, prompts and interactive displays. The user simply starts the program running, then responds to messages and questions generated by the computer to perform whatever task is desired. Only a minimum level of computer literacy is required to operate the package.

Foreword to Release 2 - Summer 1988

Significant changes have been made to MPC since its original release in the fall of 1987. Operating procedures remain essentially the same, however a number of improvements have been incorporated in program execution:

- All storage, retrieval and search functions have been accelerated through the use of indexed files. Accessing the data-base, whether to edit existing records, or conduct a search for plots meeting your selection criteria, takes only a fraction of the time to perform.

- A "multi-pass" procedure is now used to conduct searches of the data-base. This is an interactive method which permits the entry of additional selection criteria during multiple passes through the data-base. In effect, this allows you to specify a set of initial selection criteria, then operate on the new data subset to gradually narrow down your search of the PSP data-base. An "undo" function also allows you to "backup" one step when conducting a search.

- Plot records can now be selected on the basis of damage code, and multiple treatment types.

- On-line help screens are available within each keyword field. Legal codes for any field can be accessed by simply pressing F1 when the cursor is in the field of interest.

These enhancements make MPC much easier and more flexible to use. Minor changes to operating procedures are described below:

a) When initially installed, MPC must first convert the ASCII catalogue files (ARCH#1.TXT, ARCH#2.TXT, ARCH#3.TXT) into encrypted data-base format. This must be done only the first time that MPC is run on your hard-disk drive (Main Menu Option 7).

b) Each time MPC is executed (following the initial installation) it will take a few moments to index the current data-base files. This operation is done automatically.

c) When entering a new plot in the data-base catalogue, you will be prompted for the plot number, owner agency, project name/number and province. MPC will then check the data-base to ensure that no duplicate record exists. If this "key" is accepted, the full range of data-entry screens will be displayed.

d) After installing MPC and converting the ASCII files to data-base files, all plot documentation is maintained in encrypted (and indexed) form. To obtain a copy of all PSP catalogue information stored in the data-base, select Main Menu Option 6 and supply output file names. MPC will then convert the data-base back into ASCII format.

Table of Contents

Chapter		Page
	Summary	i
	Foreword to Release 2 - Spring 1988	ii
1.0	**Introduction**	1
	1.1 MPC Overview	1
	1.2 Data-Base Structure	3
	1.3 System Configuration	6
2.0	**System Setup**	8
	2.1 Getting Started	8
	2.2 Notation Used In This Manual	8
	2.3 File Names	9
3.0	**Starting MPC**	10
	3.1 Assignment of Function Keys	10
4.0	**MPC Main Menu**	11
	4.1 Option 1: Introduction And Instructions	12
	4.2 Option 2: Interrogate The Data-Base	13
	4.2.1 Selection 1: Help	13
	4.2.2 Selection 2: Search and Select Plots	15
	4.2.3 Selection 3: Display Default Directory	20
	4.2.4 Selection 4: Exit	20
	4.3 Option 3: Enter/Edit Plot Header Data	21
	4.3.1 Selection 1: Help	21
	4.3.2 Selection 2: Enter Header Data From a New PSP	22
	4.3.3 Selection 3: Edit Existing Header Data	22
	4.3.4 Selection 4: Exit	22
	4.4 Option 4: File Handling and Maintenance	23
	4.4.1 Selection 1: Disk Directories	24
	4.4.2 Selection 2: File Handling Functions	24
	4.5 Option 5: Default System Configuration	25
	4.6 Option 6: Convert Entire Data-Base to Ascii Files	26
	4.7 Option 6: Install Data-Base	26
	Appendix MPC Data-Base Contents and Standard Codes	28

1.0 Introduction

The collection and analysis of forest site and growth information is an important component of forest management. The development of managed stand yield tables and computerized yield projection systems require access to historical tree and stand growth information. Securing this data represents a considerable investment in time and resources. For example, the current real value of permanent sample plot (PSP) data residing at the Canadian Forestry Service's (CFS) Northern Forestry Centre exceeds $3,000,000.00. In addition to costs expended on data acquisition, this information has an intangible value as it consists of unique, irreplaceable time-series measurements, some of which date to the early 1920's.

The quality and quantity of PSP data retained by forestry agencies and companies (including the CFS) has warranted a serious effort to organize and incorporate PSP catalogue information into a computerized data-base management system. Overall, this will enhance primary and secondary use of the data, and will encourage sharing of PSP information.

The purpose of the Microcomputer PSP Catalogue (MPC) system, described here, is to facilitate the storage and retrieval of data pertaining to individual permanent sample plots archived by the CFS and other forestry agencies. MPC is a structured, relational data-base system which performs two vital functions:

1. It serves as a means for documenting, in a standard and consistent format, information pertaining to PSP's maintained within both historical, and current, inventory.

2. It acts as a utility for selecting and accessing information contained within the data-base, and provides procedures for investigators to generate visual or printed reports describing plots matching a given set of selection criteria. This information will, in turn, direct investigators to the appropriate tree-detail data, stored within the main PSP data-base files residing with the owner agency.

1.1 MPC Overview

MPC is a structured, relational data-base system. Conceptually, this system can be considered as a series of tables with defined relationships between specific elements (fields, attributes) within the tables. Data-entry, updating and retrieval are transacted through the use of utility functions contained within computer programs.

The microcomputer data-base structure was formulated to account for the most important and applicable criteria available on permanent sample plots. The data-base format was originally derived from the Canadian Permanent Sample Plot Catalogue (CPSPC) and enhanced with additional data fields. In developing the data-base architecture, a number of design questions were addressed:

1. What information pertaining to ownership, location, plot/stand/site conditions, data resolution, measurement dates and treatments are common to most plot records?

2. What catalogue information is critical for use in selecting PSP's from the data-base? The most important plot attributes serve as selection criteria (i.e. browsable "keywords").

3. What catalogue information is useful to investigators, though not necessary for plot selection operations?

4. What level and detail of information is required to yield the most meaningful, and operationally feasible, data management system?

5. What are the relational elements within each plot attribute record? How do they interact?

6. In what manner can all components of the information management system be combined in a consistent, comprehensive framework?

A review of the CFS PSP's selected for inclusion in the catalogue system indicated that the type, resolution and complexity of data collected on permanent sample plots differs depending on the specific objectives of the investigation. Most PSP projects encountered contained some, or all, of the following information:

Administrative: Includes a collection of correspondence and administrative documents pertaining to the status of the plot, project name, location, objectives, treatment type and date (if applicable), expectations of further field work, data summaries and prepared reports.

Location: Includes an index map showing the location of the PSP in relation to other PSPs in the same experiment. Maps are drawn to scale and contain map references (township, range, meridian, section, legal subdivision), plot dimensions and survey traverse details (Note: Extreme care was taken in the layout and surveying of most CFS PSPs). Survey and tie field notes are commonly available, giving tie points, bearings and distances between plot corners, and latitude and departure calculations for the determination of plot area and error of closure.

Photographic Records: Includes terrestrial photographs and accompanying documents describing photograph number, date, location, and view (content).

Stand History: Includes a description of site attributes at the time of plot establishment (approximate stand age, origin, evidence of damage).

Analysis of Study: Includes details on the study classification number, and information on the study plan:
- object of establishment
- methods selected to carry study to completion
- results expected, and within what period
- application of results obtained, present and future
- provision for extension of the study

Forest Description: Includes observations of the following forest stand conditions, recorded at each remeasurement visit to the plot:
- forest type class
- measure of site quality
- species composition
- stand density

Site Description: Includes observations of the following site conditions, recorded at plot establishment:
- slope
- aspect
- elevation
- topography
- slope position
- soils
- ground vegetation

Tree Detail: Tree detail has been recorded in a variety of formats, two of the most

common being:
- Individual tree measurements: includes species, status at each remeasurement visit (live, dead), diameter at breast height, damage appraisal, crown class, total height (frequently sampled) for trees on the plot.
- Diameter distribution summaries: includes stem counts for each species recorded by diameter class, sampled individual tree diameters and heights.

Miscellaneous: Occasionally included in plot project files are the following:
- work diaries
- compiled stand and stock tables calculated before and after treatment
- stem maps plotted to scale on graph paper

The MPC catalogue was constructed to accomodate the categories of information most commonly collected on permanent sample plots. In cases where extensive detail on site conditions is available within project files (eg. soils analysis, stem-analysis), "indicator" fields are used to flag the presence of this information. This has two advantages:

1. The interested investigator is alerted to the availability of this information;
2. The data-base is not overburdened with extraneous detail.

1.2 Data-Base Structure

The PSP header information which is accessed by MPC is stored in 3 ASCII files (ARCH#1.TXT, ARCH#2.TXT, ARCH#3.TXT). Each file contains a specified set of data pertaining to each plot. The file ARCH#1.TXT is the primary source file, containing the following information:

- Administrative detail
- Plot and stand attributes
- Dates of establishment and remeasurement
- Dates and types of treatments

The file ARCH#2.TXT contains information on associated publications (if available). Individual records (i.e. specific publications) within this file are related to the primary source file by project number/code. Comments on plot measurements, treatment types etc. are stored in the file ARCH#3.TXT and are attached to each plot.

The majority of information contained within the catalogue is common to most PSP's. Exceptions include the following:

- VSR (Volume Sampling Region) is applicable only in Alberta;
- BIOGEO (Biogeoclimatic region) is currently only available in Alberta;
- UTM grid coordinates (zone, easting, northing) currently apply only to the PSP's of the Saskatchewan Department of Parks and Renewable Resources.

Following is a breakdown by category of the individual fields (i.e. plot attributes) within the data-base.

Data-Base Structure by Category of Information

Category	Field/Attribute	Definition
Administrative	Plot Number	Numeric code (6 digits)
	Project Name	10 character alpha/numeric sequence
	Owner Code	4 character alpha/numeric sequence
	Location	6 character alpha/numeric sequence
Geographical Location	Province	2 digit character code
	Reference Type	1 digit flag indicating UTM or township/range
	Township/Zone	Maximum 3 digit numeric sequence
	Range/Easting	Maximum 3 digit numeric sequence
	Meridian/Northing	Maximum 3 digit numeric sequence
	Biogeoclimatic Zone	3 character sequence (Alberta reference)
	Volume Sampling Region	2 digit numeric code (Alberta reference)
Plot Attributes	Status	1 digit flag describing current status
	Area	4 digit numeric sequence (m^2)
	Minimum DBH	Minimum recorded tally (cm): 4 digits
	Units	1 digit flag for units of measure
	Type of Information	3 digit numeric sequence (data resolution)
	Stem Map Information	1 digit flag indicating map availability
	Stem Analysis Data	1 digit flag indicating data availability
	Soils Information	1 digit flag indicating data availability
	Regeneration Information	1 digit flag indicating data availability
	Damage	1 digit flag indicating severity of damage
Site Attributes	Elevation	4 digit numeric sequence (m)
	Aspect	3 digit numeric sequence (degrees)
	Slope	3 digit numeric sequence (%)
	Position	1 digit, position of plot on slope
	Landform Type	10 character sequence indicating: - composition (material) - surface expression
	Drainage	1 digit numeric code indicating site drainage
	Site Quality	1 digit numeric code
Stand Attributes	Primary Species	2 character sequence for tree species
	Composition (%)	3 digits - % volume for primary species
	Secondary Species	2 character sequence for tree species
	Composition (%)	3 digits - % volume for secondary species
	Stand Age (Establishment)	3 digit numeric value (years)

Data-Base Structure by Category of Information (cont.)

Category	Field/Attribute	Definition
Benchmark Dates	Date 1	2 digit numeric value (establishment year)
	Date 2	2 digit numeric value for remeasurement 1
	Date 3	2 digit numeric value for remeasurement 2
	Date 4	2 digit numeric value for remeasurement 3
	Date 5	2 digit numeric value for remeasurement 4
	Date 6	2 digit numeric value for remeasurement 5
	Date 7	2 digit numeric value for remeasurement 6
	Date 8	2 digit numeric value for remeasurement 7
	Date 9	2 digit numeric value for remeasurement 8
	Date 10	2 digit numeric value for remeasurement 9
	Treatment Date 1	2 digit numeric value for year of treatment 1
	Treatment Date 2	2 digit numeric value for year of treatment 2
	Treatment Date 3	2 digit numeric value for year of treatment 3
	Treatment Date 4	2 digit numeric value for year of treatment 4
	Treatment Date 5	2 digit numeric value for year of treatment 5
	Treatment Date 6	2 digit numeric value for year of treatment 6
	Treatment Date 7	2 digit numeric value for year of treatment 7
	Treatment Date 8	2 digit numeric value for year of treatment 8
	Treatment Date 9	2 digit numeric value for year of treatment 9
	Treatment Date 10	2 digit numeric value for year of treatment 10
Benchmark Treatments	Treatment 1	3 digit code for treatment type
	Treatment 2	3 digit code for treatment type
	Treatment 3	3 digit code for treatment type
	Treatment 4	3 digit code for treatment type
	Treatment 5	3 digit code for treatment type
	Treatment 6	3 digit code for treatment type
	Treatment 7	3 digit code for treatment type
	Treatment 8	3 digit code for treatment type
	Treatment 9	3 digit code for treatment type
	Treatment 10	3 digit code for treatment type

In addition to the formal fields defined above, a number of fields are reserved for the input of supplementary information related to:

1. Associated Publication(s): Includes author, date, title and publication name;
2. Comments: Used to describe individual treatments in detail, cautions and relevant detail.

The definition of acceptable and prescribed codes for each individual field are provided in the appendix. In many cases, definitions are self-evident (eg. years of measurement and treatment, flags indicating the presence of specific soils, regeneration data etc.). However, some explanation is required for specific fields within the data-base:

1. Primary species at plot establishment: The 2 digit species codes used in MPC are the same as those employed in the CPSPC. The abbreviated list shown in the appendix includes most of the species encountered within the Prairie Provinces. Species codes other than those indicated can be entered if required.

2. Provincial codes, plot status and position codes were adapted directly from the CPSPC.

3. Owner agency and location (physical location of the data) codes are simply meaningful abbreviations and/or acronyms.

4. Information Type: This 3 digit sequence defines the data currently maintained within the catalogue data-base. Further enhancements or refinements of these codes may be considered should the need arise (i.e. when data of a peculiar and unique nature is encountered). The code sequences used in MPC breakdown the data-types into 2 major divisions:

   a) individual tree tallies
   b) diameter distribution tallies

   The "100" series (individual tree tallies) is refined by indicating whether all heights, or a sample, were measured, and whether spatial coordinates were recorded. The "200" series (diameter class tallies) indicates the presence of sampled tree heights and diameters within the recorded classes.

5. Site drainage, site quality, biogeoclimatic zone, and VSR codes were adapted from Alberta Forest Service descriptors.

6. Treatment type codes were adapted from both the CPSPC and AFS systems. Further elaboration on the type and application of the treatment can be entered into the comment fields attached to the data-base.

7. The suggested code sequence for landform type was derived from preliminary physiographic map legends developed in Alberta. Landform type is an aggregate code, indicating the derivation of current surficial features from parent materials. It is a combination code consisting of:

   - Composition (material): colluvial, eolian, fluvial, glacial-fluvial, glacial-lacustrine, morainal, rock, undifferentiated
   - Surface expression: delta, fan, level, inclined, undulating, rolling, hummocky, ridged, steeply inclined, terraced, blanket, veneer
   - Modifier: dissected

   The code combination is constructed using standard geological conventions.

1.3 System Configuration

MPC is a portable information system and is designed to operate on IBM-compatible microcomputers equipped with hard-disk drives. The software is a flexible, "user-friendly" tool which provides full-screen, menu-driven utilities for data-entry, editing and plot selection. MPC features an on-line help facility and extensive edit checks. Interactive prompts and program messages are used to assist the investigator with the following tasks:

- Inputting new PSP header data;
- Editing and updating existing data (i.e. plot headers already stored in the data-base);
- Formulating data-base search requests.

MPC accesses the ASCII data files using the following "structural" data-base files:

- ARCHIVE1.DBF
- ARCHIVE2.DBF
- ARCHIVE3.DBF

Various temporary files are used in the exchange of information when searching the data-base for plots meeting specified criteria, generating reports and output files, as well as when entering or updating

header information. It is therefore essential that all required files reside in the current default directory (see Section 2.3: File Names), and that sufficient hard disk space is available for file handling operations.

2.0 System Setup

2.1 Getting Started

If you are familiar with microcomputer operations, you will be pleased at how easy MPC is to learn.The essential steps to using MPC for the first time are:

1. Read the manual thoroughly.
2. Install MPC on your hard disk.
3. Type MPC to start. For details, see Chapter 3.

Reading selectively should help to speed up the learning process for you. Experienced microcomputer operators can now skip ahead to Chapter 3 - STARTING MPC.

2.2 Notation Used In This Manual

It is important to be able to understand the notation used in this manual, particularly since some symbols found on your keyboard cannot be duplicated readily in printed form.

Function Keys [F-n]

Refers to the keys at the top or left hand side of the keyboard which may take on a function at different times during program operation.

Enter [CR]

The ENTER (also called CARRIAGE RETURN) key is the large key which looks like this <-┘. This manual will say "press ENTER" or press [CR] in reference to this key.

The Cursor

The cursor is the small blinking line or box on the screen. It serves as a marker that points to your place on the screen. Any typing you do will occur here. It can be compared with the place where the keys of a typewriter strike the paper – whether this is at the top of the page, in the middle, or at the bottom.

Menus

A computer menu is much like a restaurant menu: it lists the choices available to you. On a MPC menu, you will see a list of items which you can select. In order to choose a particular item on the menu, and to carry out that action, simply press the number of the desired selection, or move the highlighted box down to the desired selection (using the cursor arrow keys) and pressing [CR].

Prompts

A prompt is simply a message from MPC asking you to do something. For instance, you will be prompted to provide file names in which the program will store your output information.

Files

A file on a computer is similar to a file in a filing cabinet. It is a place to store information in a separate package so that it can be retrieved at some future date. Files are stored on either floppy disks, or on a hard disk, ensuring that the information is saved when the computer is turned off.

Directory

A directory is a portion of the hard-disk set aside to contain unique files and commands.

Num Lock

The Num Lock key on your keyboard changes the operation of a special set of keys. Most IBM PC's and compatibles have a "numeric keypad" on the right hand side of the keyboard. These keys can perform two entirely different functions, depending on whether or not the Num Lock key has been pressed. Normally when you start your computer these keys will be in the NON-numeric mode – instead of producing numbers on the screen, these keys will cause the cursor to move up, down, right, left, or they may cause the entire screen to change, depending on the application program being used. By pressing Num Lock, you are "toggling" the numeric keypad – changing the meaning of its keys. Pressing one of these numeric keys now is just the same as pressing one of the numeric keys along the top of the keyboard. Pressing Num Lock again will cause the meaning of these keys to revert back to their original meaning (and so on). In some parts of the MPC system, you will want to use the numeric keypad with its numbers in effect. In other parts of the system, you will want to use the cursor control keys.

DOS

The Disk Operating System is the main body of computer programs controlling the functions of the microcomputer. Returning control to DOS will result in the cursor appearing next to the screen characters "C>", "A>" or "B>".

2.3 File Names

A number of files are essential for the operation of MPC, and must be available to the program when it is executing. These files include the following:

MPC Program:	MPC.EXE
Data-Base Files:	ARCHIVE1.DBF ARCHIVE2.DBF ARCHIVE3.DBF LABEL.DBF LABEL1.DBF SYSDEF.DBF
Catalogue Files:	ARCH#1.TXT ARCH#2.TXT ARCH#2.TXT

A standard file-name convention has been used in MPC. The catalogue data is stored in ASCII files with a ".TXT" extension. Output files generated by the program also have this suffix. Care should be taken in file management procedures (erasing, renaming, copying) to ensure that the integrity of the above files is maintained.

3.0 Starting MPC

MPC is designed to be installed, and functions most efficiently, on a hard disk unit. The program, database and structural files are contained on 2 floppy diskettes accompanying this manual. The program should reside in a directory selected by the user. In order to initialize the MPC system, do the following:

a) Go to the DOS "C>" prompt (assuming "C" is the designation of your hard disk);

b) Create a new hard disk directory. For example, to create the directory "PSP", enter:

MD PSP

c) Copy all of the files from both diskettes accompanying this manual into the new directory.

In order to execute MPC, do the following:

1. Go to the DOS "C>" prompt;

2. Go to the directory containing your MPC program by instructing the computer to change the current directory (CD). For example, if MPC resides in the directory "PSP", enter the following commands:

   CD \PSP

   and press [CR].

3. Enter the command MPC to run the program.

   A command is entered by typing it and then pressing the [CR] ("Enter") key. Therefore, type

   MPC

   and then press [CR].

4. Follow the screen instructions presented in the menus. Further information on program execution is provided in Section 4.

3.1 Assignment of Function Keys

In some cases, the function keys (F2-F10) and other keys on the keyboard have been reassigned to perform the following operations:

F1	On-Line Help Facility
F8	Go to previous screen
F9	Go to next screen
F10	Exit and save screen input
Up Arrow	Moves cursor back 1 field
Dn Arrow	Moves cursor forward 1 field
Left Arrow	Moves cursor 1 character to the left within a field
Right Arrow	Moves cursor 1 character to the right within a field
[CR]	Carriage Return: input data and advance 1 field
[home]	Moves cursor to the first column (character) within a field
CTL [home]	Moves cursor to the first field on the screen
[end]	Moves cursor to the last column (character) within a field
CTL [end]	Moves cursor to the last field on the screen

4.0 MPC Main Menu

After entering "MPC" the program will take a few moments to be loaded into memory and to index the data-base files. The title screen will be displayed (Press any key to continue ...), followed by the system date routine. If your computer has a functioning internal clock, MPC will retrieve the correct system date (YY/MM/DD). This date will be attached to any output and reports generated by MPC. Change the date if desired, then press F10 to continue. The Main Menu (as shown below) will then be displayed:

CANADIAN FORESTRY SERVICE
NORTHERN FORESTRY CENTRE
MICROCOMPUTER PSP CATALOGUE SYSTEM

1. INTRODUCTION AND INSTRUCTIONS
2. INTERROGATE THE DATA-BASE
3. ENTER/EDIT PLOT HEADER DATA
4. FILE HANDLING AND MAINTENANCE
5. DEFAULT SYSTEM CONFIGURATION
6. CONVERT ENTIRE DATA-BASE TO ASCII
7. INSTALL DATA-BASE
8. EXIT TO DOS

INTRODUCTION TO THE SYSTEM AND OPERATING INSTRUCTIONS

The Main Menu contains the major functions of MPC. It consists of three main parts:

1. Program Headings (screen titles)
2. Menu Selections (numbered choices)
3. Message Area (information appearing at the bottom of the screen)

Once the Main Menu is displayed a highlighted box is positioned over the first menu selection:

1. INTRODUCTION AND INSTRUCTIONS

At the bottom of the screen, a message is displayed describing that menu selection (INTRODUCTION TO THE SYSTEM AND OPERATING INSTRUCTIONS). Using the cursor arrow keys (up,down), you can move the highlighted box to any of the selections. To perform a chosen function from the menu, either position the box over that item, and press [CR], or simply press the appropriate number from the numeric keypad at the top of the keyboard.

3.1 Option 1: Introduction and Instructions

A limited amount of on-line help is available within MPC. Menu Option 1, when selected here, will display the following information:

MICROCOMPUTER PSP CATALOGUE SYSTEM
GENERAL INSTRUCTIONS

The Micrcomputer PSP Catalogue System has been designed to provide:

a) Access to the main data-base in order to add/edit pertinent PSP plot header information;
b) An easy to use facility for interrogating the header data-base.

Information contained in the data-base pertains to the following:

a) Plot identification (plot number, project name, owner agency)
b) Plot location (province, township, range, status etc.)
c) Plot attributes (type, area)
d) Stand conditions at establishment (species composition, age)
e) Site conditions (elevation, aspect, slope, slope position, landform, drainage, site quality)
f) Important dates (establishment, remeasurements, treatments)
g) Treatment types
h) Type of information collected (individual tree dbh, height)

MICROCOMPUTER PSP CATALOGUE SYSTEM
GENERAL INSTRUCTIONS

In addition, the following information is included in the data-base:

a) Reference list (associated publication)
b) Comments/cautions pertaining to the collection/use of the data

To access the data, and to interrogate the data-base, it is necessary only to follow the simple directions in the accompanying user's manual, and respond to the menu prompts in this program. Numerous edit checks have been incorporated in this program to ensure proper function. Screen messages are displayed at critical points to keep you informed as to the stages being encountered in program execution.

Note: Adequate disk space must be available for the proper operation of MPC. Also, make sure that the CONFIG.SYS file has a minimum setup of "FILES=20" and "BUFFERS=8".

MPC was compiled under DOS version 3.2. Non-fatal run-time errors may be encountered if used with lower levels of DOS.

4.2 Option 2: Interrogate The Data-Base

Option 2, the most common function performed by MPC, is selected when you want to access the data-base catalogue in order to:

- extract information pertaining to plots that meet specified criteria;
- view selected information on the screen;
- generate reports.

When this option is chosen, the following screen will be displayed:

MICROCOMPUTER PSP CATALOGUE SYSTEM
DATA-BASE SEARCH ROUTINE

1. HELP
2. SEARCH AND SELECT PLOTS
3. DISPLAY DEFAULT DIRECTORY
4. EXIT

INFORMATION AND INSTRUCTIONS ON HOW TO INTERROGATE THE DATA-BASE

4.2.1 Selection 1: Help

This menu option will display the following information on the screen:

MICROCOMPUTER PSP CATALOGUE SYSTEM
INSTRUCTIONS: SEARCH ROUTINE

This option is designed to provide access to the catalogue data-base, containing all of the header information on the PSP's stored in the system. To search the catalogue for plots that match your requirements, follow these steps:

1. Formulate the inquiry by specifying selection criteria
2. Execute the search
3. Specify viewing and/or printing instructions

The program will locate records in the data files which match your selection criteria. When completed, MPC will indicate the number of records which were found and will ask whether to continue or not. A number of choices are available for viewing results of the search, and for generating hard-copy output. Note: Selection criteria will be displayed following completion of the search.

MICROCOMPUTER PSP CATALOGUE SYSTEM
INSTRUCTIONS: SEARCH ROUTINE

The following choices for displaying results are available in MPC:

1. View results on the screen
2. View results on the screen and print them simultaneously
3. View results on the screen and send output to specified files
4. View results on the screen, print them, then send output to specified files
5. Send results directly to output files

Two report formats can be selected for viewing, printing or storing. The condensed report contains extracts from the catalogue for each plot located. Each line represents a single plot with the following column headings:

1. Plot
2. PR (Province)
3. R (Reference Type)
4. OWN (Owner)
5. T/Z (Township/Zone)
6. R/E (Range/Easting)
7. M/N (Meridian/Northg
8. S (Status)
9. TYP (Type of Information
10. MDBH (Minimum DBH Tallied)
11. Area (Plot Area)
12. YR (Year Established)
13. XM (Times Measured)
14. SP (Initial Species)
15. AGE (Years)
16. ELEV (Elevation)
17. ASP (Aspect)
18. SLO (Slope)
19. M (Stem-Mapped)
20. S (Soils)
21. Q (Site Quality)
22. TRT (Treatment)

MICROCOMPUTER PSP CATALOGUE SYSTEM
INSTRUCTIONS: SEARCH ROUTINE

The full format report displays all information contained within the catalogue data-base pertaining to the selected plots. It includes the following:

1. Plot
2. Project
3. Owner
4. Province
5. Location
6. Reference Type
7. Township/Zone
8. Range/Easting
9. Meridian/Northing
10. Biogeo Zone
11. VSR
12. Status
13. Damage
14. Area
15. Minimum Dbh Tallied
16. Type of Information
17. Stem Mapped Data
18. Stem Analysis Data
19. Soils Data
20. Regen Tally
21. Primary Species
22. % Content
23. Secondary Species
24. % Content
25. Age
26. Elevation
27. Aspect
28. Slope
29. Slope Position
30. Landform
31. Drainage
32. Year of Establishment
33. Years of Remeasurement
34. Treatment Types
35. Treatment Dates
36. Associated Publications
37. Comments

4.2.2 Selection 2: Search and Select Plots

This menu option executes the main search and select operation within MPC. When selected, 3 input screens will be displayed. Each screen contains fields for the entry of the following plot selection criteria:

MICROCOMPUTER PSP CATALOGUE SYSTEM
CATALOGUE SEARCH ROUTINE
PLOT LOCATION CRITERIA

PROVINCE OR	OWNER/AGENCY	BIOGEO ZONE	VSR	
__ OR __	_____	____	____	
REFERENCE TYPE (U/T):		____		
PROJECT NAME:		_____		
MERIDIAN LIMITS - EASTERN:		____	WESTERN:	____
INCLUDE EAST OF 1ST MERIDIAN? (Y/N):		____		
TOWNSHIP LIMITS - SOUTHERN:		____	NORTHERN:	____
RANGE LIMITS - EASTERN:		____	WESTERN:	____
ZONES - WESTERN LIMIT:		____	EASTERN:	____
EASTINGS - EASTERN LIMIT:		____	WESTERN:	____
NORTHINGS - SOUTHERN LIMIT:		____	NORTHERN:	____

F 1 - HELP CODES
F 9 - GO TO NEXT PAGE
F 8 - GO TO PREVIOUS PAGE
F 10 - EXIT AND SAVE SELECTION

MICROCOMPUTER PSP CATALOGUE SYSTEM
CATALOGUE SEARCH ROUTINE
PLOT ATTRIBUTES

PLOT STATUS:	_
MINIMUM PLOT AREA (SQ. M.):	_____
INFORMATION TYPE:	____
MIN. DBH TALLY (CM):	_____
STEM MAP? (Y/N):	_
STEM ANALYSIS? (Y/N):	_
REGENERATION TALLY? (Y/N):	_
DAMAGE CODE:	_

F 1 - HELP CODES
F 9 - GO TO NEXT PAGE
F 8 - GO TO PREVIOUS PAGE
F 10 - EXIT AND SAVE SELECTION

MICROCOMPUTER PSP CATALOGUE SYSTEM
CATALOGUE SEARCH ROUTINE
STAND AND SITE CONDITIONS

PRIMARY SPECIES:		___	OR	___	
SECONDARY SPECIES:		___			
AGE AT ESTABLISHMENT:		___			
SITE QUALITY:		___			
ELEVATION (M):	MINIMUM:	___		MAXIMUM:	___
ASPECT (DEGREES):	MINIMUM:	___		MAXIMUM:	___
SLOPE (PERCENT):	MINIMUM:	___		MAXIMUM:	___
MINIMUM NUMBER OF MEASUREMENTS:		___			
INITIAL TREATMENT TYPE:		___			
OTHER TREATMENT TYPE:		___	OR	___	

F 1 - HELP CODES
F 10 - EXIT AND SAVE SELECTION
F 8 - GO TO PREVIOUS PAGE

To construct a search request, simply enter your selection criteria in the appropriate field(s). For example, if you want to select plots with the primary species of white spruce on plots with a minimum size of 500 m^2, located in Alberta on sites with an elevation between 1,000 and 2,000 metres, do as follows:

a) Enter "AL" in one of the fields beneath PROVINCE on screen 1;
b) Enter "500" in the field next to MINIMUM PLOT AREA (SQ. M.) on screen 2;
c) Enter "SW" in one of the fields next to PRIMARY SPECIES on screen 3;
d) Enter "1000" in the field corresponding to minimum elevation on screen 3;
e) Enter "2000" in the field corresponding to maximum elevation on screen 3.

You can select either 1 or 2 provinces, and 1 or 2 primary species. In order to define a specific geographic location, specify the reference type (eg. "T" for township/range/meridian), then outline the boundary by defining the limits in each direction. Function key definitions are displayed at the bottom of each screen. Keys F8 and F9 are used to move around the individual screens. Key F1 is used to access the on-line help facility for that particular field, there is online help for province, owner agency, biogeoclimatic zones, map reference type, plot status, site quality, type of information, damage code, specie type, and treatment type.

To exit the screen(s) containing the selection criteria, press F10. MPC will then request confirmation to continue. If no selection criteria were specified, MPC will provide the following warning when requesting whether to continue:

NO SELECTION CRITERIA WERE SPECIFIED. IF YOU CONTINUE, ALL RECORDS WILL BE PROCESSED. DO YOU STILL WISH TO CONTINUE? (Y/N): [ ]

If you respond "Y", MPC will execute the search using the selection criteria that you have entered, otherwise the search will be cancelled and control will be returned to the menu.

When the search is completed, MPC will display one of two messages. The first message (shown below) will be displayed when no records were located using the selection criteria specified.

NO RECORDS SATISFIED SELECTION CRITERIA SPECIFIED

DO YOU WANT TO UNDO THE PREVIOUS SELECTION (Y/N): [ ]
Y - UNDO THE LAST CRITERIA SELECTION
N - RETURN TO DATA-BASE SEARCH MENU

Enter "Y", to undo the previous selection and enter a different set of selection criteria. Enter "N", to return control to the main menu and reformulate another inquiry.

The second message will be displayed when at least 1 plot record from the data-base matches the selection criteria.

A TOTAL OF ### RECORDS MATCH YOUR SELECTION CRITERIA.

DO YOU WANT TO SELECT FURTHER OR UNDO SELECTION (Y/N/U): [ ]
Y - MAKE FURTHER SELECTIONS (NARROW THE SEARCH)
N - GENERATE REPORT WITH THE RECORDS SELECTED
U - UNDO THE LAST CRITERIA SELECTED

Enter "Y", to specify additional search criteria. The original selection criteria screens will then reappear. Field entries from earlier passes will be shown as permanent input. Further selections can be entered in any remaining blank (i.e. unoccupied) fields. When prompted to continue, MPC will search the subset data-base for records matching the additional selection criteria. Any number of multiple passes through the data-base can be made. Processing will be terminated when the subset data-base has been reduced to nil. At any point, you have the option of "un-doing" your last operation (i.e. backing up one step and reformulating your inquiry).

When the response to the above prompt is "N", MPC will ask for viewing and printing instructions. Respond to the following:

DO YOU WANT TO VIEW RESULTS OF THIS SEARCH ON THE SCREEN (Y/N): [ ]

If you select "N" MPC will bypass the prompts and displays associated with generating screen output and will immediately request instructions on saving the output in permanent disk files. If you select "Y", the following message will appear:

PLEASE SELECT THE DESIRED OUTPUT FORMAT:
C - CONDENSED FORMAT
F - FULL FORMAT
[ ]

Respond with either "C" or "F", then indicate whether you want to send all output viewed on the screen to your printer as you are viewing it. Next, MPC will ask:

DO YOU WANT TO HAVE PAGE SCROLLING? Y/N): [ ]

Select "Y" to generate a pause following each screen of output. After you have answered the query, the selection criteria you have selected will be displayed. Fields that were not selected on will appear as blanks (if alphabetic) or as zeroes (if numeric). After examining this screen, press any key to continue. The requested output (either condensed or full format) will be displayed on the screen (and optionally

sent to your printer).

When all output has been viewed, press any key to continue. At this point, the following prompt will appear:

DO YOU WANT TO SAVE THE PREVIEWED RESULTS IN A PERMANENT FILE? (Y/N): [ ]

Press "N" if you wish to cancel this operation and return to the main menu. If you enter "Y", the following message will be displayed:

A TOTAL OF: [ ] RECORDS MATCH YOUR SELECTION CRITERIA

MEMORY REQUIREMENTS[ ] K BYTES (CONDENSED FORMAT FILE)
[ ] K BYTES (FULL FORMAT FILE)

DO YOU WANT TO SAVE THE DATA IN A CONDENSED FORMAT FILE? (Y/N): [ ]

The memory requirements shown above provide an approximation of the size of the disk files if created. The full format file requires a great deal of disk space and takes a considerable amount of time to process, particularly if a large number of records were selected (i.e. over 50).

If you wish to save the data in either a condensed and/or full format file, respond "Y" to the prompts and provide an output file name. MPC will check to ensure that a duplicate file doesn't exist and will then process the data-base records. If the file name you select already exists in the directory, MPC will warn you and ask for further instructions (i.e. continue, or try another file name). Note: MPC uses a file name convention wherein the extension ".TXT" is attached to all output files. Therefore, when providing a file name, you need only enter the first 8 characters.

The condensed output format contains the following information for each selected plot (output on a single, condensed line):

Column Heading	Contents
PLOT	Plot number
PR	Province
R	Reference Type (T=Township/Range/Meridian, U=UTM)
OWN	Owner agency/company
T/Z	Township (if reference type = T) Zone (if reference type = U)
R/E	Range/Easting
M/N	Meridian/Northing
S	Plot status
TYP	Information type
MDBH	Minimum dbh (cm)
AREA	Plot area (m^2)
YR	Year of establishment
XM	Number of times remeasured
SP	Primary species
AGE	Age at establishment
ELEV	Elevation (m)
ASP	Aspect (degrees)
SLO	Slope (percent)
M	Availability of stem-map information (y/n)
S	Availability of soils information (y/n)
Q	Site quality
TRT	Treatment type

The full format output contains all information for each of the selected plots stored within the catalogue data-base including extended information on remeasurement dates, treatment dates, treatment types, associated publication(s) and comments on plot measurement procedures and quality.

4.2.3 Selection 3: Display Default Directory

This option will display the names of all files with the ".TXT" extension that reside in the default directory (normally c:). MPC uses a standard file naming convention whereby all input and output ASCII files have their file names appended with the ".TXT" extension. This is necessary to distinguish data-base files from other files that may be stored on your disk. Note: If desired, output files can be renamed using the file handling functions available through MENU 1.

4.2.4 Selection 4: Exit

This option will return control to the previous menu (MPC Main Menu).

4.3 Option 3: Enter/Edit Plot Header Data

Option 3 is selected when you want perform the following tasks:

- Enter catalogue information for a PSP that is not currently included in the data-base
- Edit, update or add to information related to a PSP that is stored in the data-base

The following screen will be immediately displayed when this option is selected:

CANADIAN FORESTRY SERVICE
INPUT MENU

1. HELP
2. ENTER HEADER DATA FROM A NEW PSP
3. EDIT HEADER DATA FROM A PSP CURRENTLY IN THE DATA-BASE
4. EXIT

INFORMATION AND INSTRUCTIONS ON DATA-ENTRY OPERATIONS

4.3.1 Selection 1: Help

The help menu for this option currently contains the following information:

CANADIAN FORESTRY SERVICE
INSTRUCTIONS: DATA ENTRY

The PSP header data is contained in ASCII files named ARCH#1.TXT, ARCH#2.TXT, and ARCH#3.TXT. There are 5 data-entry screens for entering new PSP data, or for editing/updating existing information:

1. Administrative detail
2. Plot and stand attributes
3. Remeasurement dates
4. Treatment types and dates
5. Description of associated publication(s) and comments

To enter catalogue information for a new PSP, select Option 2. Fill in the blank fields (where data is available) on each of the 5 entry screens. When completed, enter F10 (exit and save) and respond to the computer prompts. Control will then return to the menu.

To edit/update or to add to existing catalogue data, select Option 3. MPC will request the plot i.d. (plot number, owner, project number, province), and will search the data-base for a matching record. If a plot is found, existing data will be displayed - update/change this information as desired, then exit/save.

4.3.2 Selection 2: Enter Header Data From a New PSP

New header information can be added to the catalogue data-base by entering this selection. Enter in the plot number, owner agency, project name, and province of the new plot. If there is a plot with this "key" already in the data-base, the following message will be displayed.

> **THIS PSP DATA-FILE IS ALREADY STORED IN THE DATA-BASE.**
> **YOU ARE NOT ALLOWED TO OVERWRITE THIS PSP RECORD.**
> **SELECT OPTION 3 TO EDIT HEADER DATA OF CURRENT PSP RECORDS.**

If there is no plot in the data-base with this key, the data-entry screens will be displayed. Screen operation and control is through the use of the F keys, cursor arrows, CR key, and [home] and [end] keys.

4.3.3 Selection 3: Edit Existing Header Data

When editing or updating data on a PSP currently stored in the data-base, it is necessary to enter the following information so that MPC can locate the appropriate record:

- Plot number
- Owner agency
- Project number
- Province

This information uniquely identifies any plot within the data-base. If this key information does not match (exactly) any PSP, the operation is cancelled and the following message is displayed:

> **THIS PSP DATA-FILE CANNOT BE LOCATED IN THE DATA-BASE.**
> **PLEASE CHECK TO SEE IF YOU HAVE ENTERED THE CORRECT PSP KEY.**

If the search is successful, MPC will then display the input screens with the historical data that was retrieved from the catalogue data-base. Any field can then be edited or updated. The function key definitions are displayed at the bottom of each screen. Keys F8 and F9 are used to move around the individual screens. Key F1 is used to access the on-line field help facility which shows the code definitions.

After all changes have been made, simply enter F10 to exit the entry routine. MPC will then ask:

DO YOU WANT TO SAVE THE CHANGES (Y/N): [ ]

Enter "Y" if you want the changes to be made to the data-base file, "N" otherwise. MPC will then ask whether you want to continue with the editing session. If so, answer "Y" and enter the plot, owner, project and province for the next plot. When you are completed editing plot(s) within the data-base, respond "N" to the CONTINUE? (Y/N): [ ] prompt. MPC will then process and update the plot records in the archive data-base files.

4.3.4 Selection 4: Exit

Option 4 will return control to the previous menu (MPC Main Menu).

4.4 Option 4: File Handling and Maintenance

A number of useful file handling and management operations have been included in MPC. Proceeding through this menu option will permit the following functions:

1. Disk directories for any disk drive, for any file extension (eg. *.TXT);

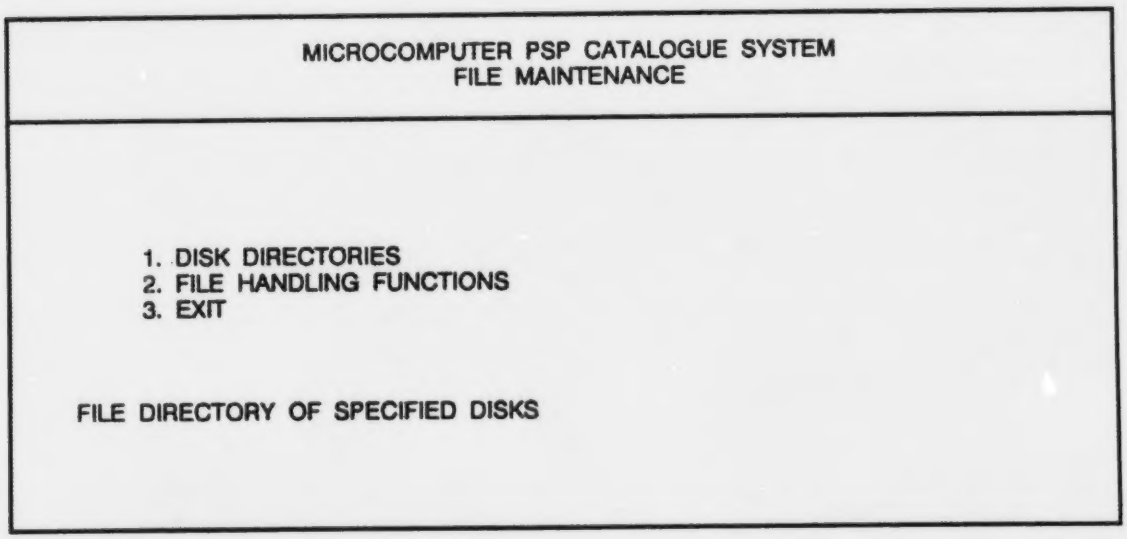
2. Renaming files on any disk drive;

3. Erasing files on any disk drive;

4. Printing files (to LPT1:) on any disk drive.

Extensive checks have been included in these functions to ensure that files are not inadvertently erased, renamed to existing files, or copied over existing files.

Following is the first screen displayed when this option is selected:



4.4.1 Selection 1: Disk Directories

MPC will request information regarding the location of the disk directory and file extensions. The following screen will solicit this information:

```
MICROCOMPUTER PSP CATALOGUE SYSTEM
FILE DIRECTORY ROUTINE

PLEASE SPECIFY DISK DRIVE TO BE ACCESSED (A,B,C,D):  [ ]

SPECIFY FILE NAME EXTENSION (IF ANY):  [   ]
```

If a directory using a file name extension is required, enter only the 3 character suffix. For example, to execute a directory of files with the "TXT" extension, enter only TXT above.

4.4.2 Selection 2: File Handling Functions

The following menu will be displayed if this option is selected:

```
MICROCOMPUTER PSP CATALOGUE SYSTEM
FILE HANDLING FUNCTIONS

1. ERASE A SPECIFIED FILE
2. RENAME A SPECIFIED FILE
3. COPY A FILE TO THE PRINTER
4. EXIT

PERMANENTLY DELETE A DISK FILE
```

To execute any of these file handling options, simply select the appropriate task, and follow the directions and prompts displayed on the screen. MPC will automatically check for proper file names and will warn you if there is a danger of corrupting existing data on the directory.

4.5 Option 5: Default System Configuration

MPC is designed to permit changes in the default system configuration. This allows data to be retrieved from any disk file and output to any disk file. In addition, if your system has a color monitor, you can select the option to have a program-generated color screen display. When this option is selected, the following prompts are displayed:

CANADIAN FORESTRY SERVICE
NORTHERN FORESTRY CENTRE
MICROCOMPUTER PSP CATALOGUE SYSTEM
SYSTEM DEFAULTS

Default disk drive for input data files:	[C]
Default disk drive for output data files:	[C]
Color screen display (Y/N)	[N]

Note:

1. If you decide to change the default disk drive for input data files, first ensure that all necessary files have been copied to the new drive.

2. Color text (C80: 80x25) will be displayed when color is selected. Errors in display may be encountered if an enhanced graphics monitor is used. If you encounter difficulties, refer to the manual for your monitor/graphics card and reset your system to display standard C80 color text.

Normally (with a hard-disk system), the default drive for input files will be C: as the data-base catalogue will reside there. Output files can be directed to any destination disk drive. The color screen can be monochrome (enter "N") or color (enter "Y").

4.6 Option 6: Convert Entire Data-Base to ASCII Files

Option 6 is selected when you want to convert all PSP catalogue data-base files to ASCII format files. MPC will prompt for a 7 character-long filename. If you had enter "PSPDAT", the ASCII files will be named PSPDAT1.TXT, PSPDAT2.TXT, and PSPDAT3.TXT. PSPDAT1.TXT will contain the data from data-base file ARCHIVE1.DBF, PSPDAT2.TXT from ARCHIVE2.DBF and PSPDAT3.TXT from ARCHIVE3.DBF.

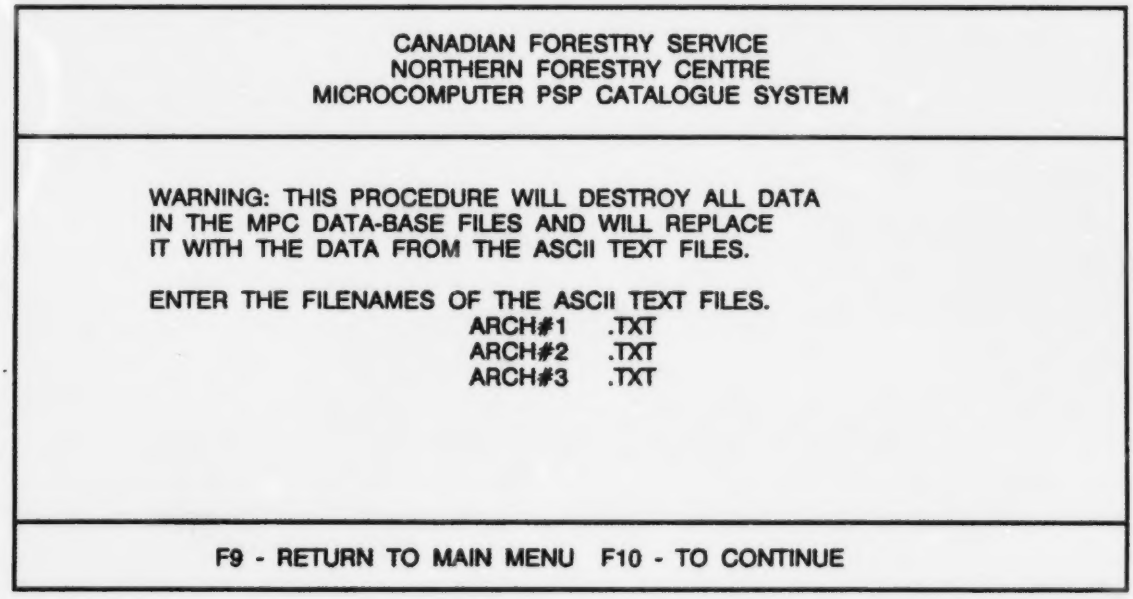
When the conversion of the data-base files is finished, the following message will be displayed:

SUCCESSFULLY COMPLETED CONVERSION OF DATA-BASE FILES

Press any key to return to the MPC main menu.

4.7 Option 7: Install Data-Base

Option 7 is selected to install the 3 ASCII files that come with the Microcomputer PSP Catalogue System or the ASCII files generated from option 6 (Convert Entire Data-Base to ASCII Files) to indexed data-base files. When this option is chosen, the following screen will appear.


CANADIAN FORESTRY SERVICE
NORTHERN FORESTRY CENTRE
MICROCOMPUTER PSP CATALOGUE SYSTEM
WARNING: THIS PROCEDURE WILL DESTROY ALL DATA
IN THE MPC DATA-BASE FILES AND WILL REPLACE
IT WITH THE DATA FROM THE ASCII TEXT FILES.
ENTER THE FILENAMES OF THE ASCII TEXT FILES.
ARCH#1 .TXT
ARCH#2 .TXT
ARCH#3 .TXT
F9 - RETURN TO MAIN MENU F10 - TO CONTINUE

Names for the ASCII files automatically default to ARCH#1.TXT, ARCH#2.TXT, and ARCH#3.TXT. You can change the default filenames to represent any appropriate catalogue files. Press F9 to cancel the operation and return to the MPC main menu or press F10 to install the ASCII files. If one of the ASCII files cannot be found on the default disk drive, the following message will be displayed:

ONE OF THE SPECIFIED ASCII TEXT FILES IS NOT THERE. (Y/N): Y
Y - RE-ENTER THE ASCII TEXT FILENAMES
N - RETURN TO MAIN MENU

If all three ASCII files are located, the installation of the data-base files will start and the following message will be displayed.

PROCESSING MPC ASCII FILES

When the installation of the data-base is finished, the data-base files will be indexed according to plot number, owner agency, project name, and province. The following message will be displayed during this operation.

INDEXING NEW MPC DATA-BASE FILES

When the indexing is finished, a message indicating that the installation operation was successful will appear. Press any key to return to the MPC main menu.

Appendix: MPC Data-Base Contents and Standard Codes

MPC DATA-BASE CONTENTS AND STANDARD CODES
ASCII FILE: ARCH#1.TXT

NUMBER	FIELD	WIDTH	CONTENTS AND ACCEPTABLE CODES
F 1	PLOT	6	NUMERIC CODE RANGING FROM 1 - 999999
F 2	PROJECT	10	ANY ALPHA/NUMERIC SEQUENCE
F 3	OWNER	4	OWNER (AGENCY OR COMPANY) CFS - CANADIAN FORESTRY SERVICE DPRR - SASKATCHEWAN DEPARTMENT OF PARKS AND RENEWABLE RESOURCES AFS - ALBERTA FOREST SERVICE
F 4	LOCATION	6	PHYSICAL LOCATION OF THE DATA NFC - NORTHERN FORESTRY CENTRE PA - PRINCE ALBERT HEAD OFFICE EDM - EDMONTON HEAD OFFICE
F 5	PROVINCE	2	PROVINCIAL CODES BC - BRITISH COLUMBIA AL - ALBERTA SA - SASKATCHEWAN MA - MANITOBA
F 6	REF_TYPE	1	MAP REFERENCE TYPE U - UTM GRID COORDINATES T - TOWNSHIP, RANGE, MERIDIAN COORDINATES
F 7	TOWNSHIP/ZONE	3	TOWNSHIP - 3 DIGIT NUMERIC CODE ZONE - 2 DIGIT NUMERIC CODE
F 8	RANGE/EASTING	3	RANGE - 2 DIGIT NUMERIC CODE EASTING - 2 DIGIT NUMERIC CODE
F 9	MERIDIAN/NORTHING	3	MERIDIAN - 1 DIGIT NUMERIC CODE NORTHING - 3 DIGIT NUMERIC CODE
F10	E_W	1	E - EAST OF MERIDIAN (IF APPLICABLE) W - WEST OF MERIDIAN (IF APPLICABLE)
F11	STATUS	1	CURRENT STATUS OF THE PLOT A - ACTIVE D - DISCONTINUED (STILL STANDING) X - DESTROYED/IRRECOVERABLE
F12	AREA	4	PLOT AREA (SQUARE METRES)
F13	MIN_DBH	4	MINIMUM DBH TALLIED ON THE PLOT (CM)
F14	UNITS	1	MEASUREMENT UNITS RECORDED I - IMPERIAL M - METRIC

MPC DATA-BASE CONTENTS AND STANDARD CODES
ASCII FILE: ARCH#1.TXT

NUMBER	FIELD	WIDTH	CONTENTS AND ACCEPTABLE CODES
F15	TYPE_INFO	3	TYPE OF INFORMATION RECORDED (DATA RESOLUTION) 101 - DBH ON ALL TREES, NO HEIGHTS, NO SPATIAL COORDINATES 102 - DBH ON ALL TREES, SAMPLED HEIGHTS, NO SPATIAL COORDINATES 103 - DBH ON ALL TREES, HEIGHTS ON ALL TREES, NO SPATIAL COORDINATES 111 - DBH ON ALL TREES, NO HEIGHTS, WITH SPATIAL COORDINATES 112 - DBH ON ALL TREES, SAMPLED HEIGHTS, WITH SPATIAL COORDINATES 113 - DBH ON ALL TREES, HEIGHTS ON ALL TREES, WITH SPATIAL COORDINATES 120 - DBH ON ALL TREES, SAMPLED HEIGHTS, UNNUMBERED 201 - STEM COUNT BY DIAMETER CLASS, NO HEIGHTS 202 - STEM COUNT BY DIAMETER CLASS, SAMPLED DBH/HEIGHTS
F16	PRIMARY SPECIES	2	PRIMARY SPECIES AT PLOT ESTABLISHMENT SW - WHITE SPRUCE SE - ENGELMANN SPRUCE SB - BLACK SRRUCE PJ - JACK PINE PL - LODGEPOLE PINE FB - BALSAM FIR FL - ALPINE FIR DF - DOUGLAS FIR LT - TAMARACK LA - ALPINE LARCH AT - TREMBLING ASPEN AL - LARGE-TOOTH ASPEN AB - BALSAM POPLAR AC - BLACK COTTONWOOD BW - WHITE BIRCH
F17	% COMPOSITION	3	PERCENT COMPOSITION OF THE PRIMARY SPECIES AT PLOT ESTABLISHMENT
F18	SECONDARY SPECIES	2	SECONDARY SPECIES AT PLOT ESTABLISHMENT
F19	% COMPOSITION	3	PERCENT COMPOSITION OF THE SECONDARY SPECIES AT PLOT ESTABLISHMENT
F20	AGE	3	TOTAL STAND AGE (YEARS) AT PLOT ESTABLISHMENT
F21	ELEVATION	4	ELEVATION (M)
F22	ASPECT	3	ASPECT IN DEGREES (NORTH = 360)
F23	SLOPE	3	SLOPE IN PERCENT
F24	POSITION	1	POSITION OF THE PLOT ON THE SLOPE 1 - RIDGETOP 2 - UPPER THIRD OF SLOPE 3 - MIDDLE THIRD OF SLOPE 4 - LOWER THIRD OF SLOPE 5 - BOTTOM OF SLOPE 6 - BROAD FLAT

MPC DATA-BASE CONTENTS AND STANDARD CODES
ASCII FILE: ARCH#1.TXT

NUMBER	FIELD	WIDTH	CONTENTS AND ACCEPTABLE CODES
F25	LANDFORM	10	LANDFORM TYPE
			COMPOSITION (MATERIAL)
			C - COLLUVIAL
			E - EOLIAN
			F - FLUVIAL
			GF - GLACIAL FLUVIAL
			GL - GLACIAL LACUSTRINE
			M - MORAINAL (TILL)
			R - ROCK
			U - UNDIFFERENTIATED
			SURFACE EXPRESSION
			1 - DELTA
			2 - FAN
			3 - LEVEL
			4 - INCLINED
			5 - UNDULATING
			6 - ROLLING
			7 - HUMMOCKY
			8 - RIDGED
			9 - STEEPLY INCLINED
			T - TERRACED
			B - BLANKET
			V - VENEER
			MODIFIER
			D - DISSECTED (IN THE GEOLOGIC SENSE)
			CONVENTIONS
			. - UNITS FOLLOWING ARE SIGNIFICANT COMPONENT
			() - UNITS ARE PRESENT BUT NOT SIGNIFICANT
			- - READ AS "OR" (BETWEEN COMPONENTS)
			/ - "OVERLYING" (USED WITH v AND b)
F26	DRAINAGE	1	DRAINAGE OF SITE
			1 - VERY RAPIDLY DRAINED, LOW AVAILABLE STORAGE CAPACITY
			2 - RAPIDLY DRAINED, LOW AVAILABLE STORAGE CAPACITY
			3 - WELL DRAINED, INTERMEDIATE STORAGE CAPACITY
			4 - MODERATELY WELL DRAINED
			5 - IMPERFECTLY DRAINED, SOIL CONTINUALLY MOIST/WET
			6 - POORLY DRAINED, EXCESS SOIL WATER EVIDENT
			7 - VERY POORLY DRAINED, STANDING WATER EVIDENT
F27	STEM_MAP	1	AVAILABILITY OF STEM MAP INFORMATION
			Y - YES
			N - NO

MPC DATA-BASE CONTENTS AND STANDARD CODES
ASCII FILE: ARCH#1.TXT

NUMBER	FIELD	WIDTH	CONTENTS AND ACCEPTABLE CODES
F28	STEM_ANAL	1	AVAILABILITY OF STEM ANALYSIS INFORMATION Y - YES N - NO
F29	SOILS	1	AVAILABILITY OF DETAILED SOILS INFORMATION Y - YES N - NO
F30	SI	1	ESTIMATE OF SITE QUALITY 1 - VERY GOOD SITE, HIGH POTENTIAL 2 - MEDIUM SITE, MODERATE POTENTIAL 3 - FAIR/POOR SITE, LOW POTENTIAL
F31	BIOGEO	3	BIOGEOCLIMATIC ZONES (ALBERTA) BML - BOREAL MIXEDWOOD - LOWER BMU - BOREAL MIXEDWOOD - UPPER BSA - BOREAL SUBARCTIC AP - ASPEN PARKLAND BCU - BOREAL CORDILLERAN - UPPER BCL - BOREAL CORDILLERAN - LOWER SAN - SUBALPINE - NORTHERN SAS - SUBALPINE - SOUTHERN IDF - INTERIOR DOUGLAS FIR ALP - ASPEN/LODGEPOLE PINE/WHITE SPRUCE FGP - FESCUE GRASS PRAIRIE
F32	VSR	2	VOLUME SAMPLING REGION (ALBERTA) ACCEPTABLE REGIONS: 1 - 8 10 - 12
F33	REGEN	1	INDICATION OF REGENERATION TALLY Y - YES N - NO
F34	DAMAGE	1	INDICATION OF DAMAGE TO PLOT 0 - NONE 1 - MINOR 2 - MODERATE 3 - SEVERE

MPC DATA-BASE CONTENTS AND STANDARD CODES
ASCII FILE: ARCH#1.TXT

NUMBER	FIELD	WIDTH	CONTENTS AND ACCEPTABLE CODES
F35	DATE1	2	YEAR OF ESTABLISHMENT
F36	DATE2	2	YEAR OF 1ST REMEASUREMENT
F37	DATE3	2	YEAR OF 2ND REMEASUREMENT
F38	DATE4	2	YEAR OF 3RD REMEASUREMENT
F39	DATE5	2	YEAR OF 4TH REMEASUREMENT
F40	DATE6	2	YEAR OF 5TH REMEASUREMENT
F41	DATE7	2	YEAR OF 6TH REMEASUREMENT
F42	DATE8	2	YEAR OF 7TH REMEASUREMENT
F43	DATE9	2	YEAR OF 8TH REMEASUREMENT
F44	DATE10	2	YEAR OF 9TH REMEASUREMENT
F45	TREAT1	3	FIRST TREATMENT CODE 0 - NO TREATMENT - NATURAL REGENERATION 100 - NATURAL REGENERATION FOLLOWING HARVESTING 101 - PLANTED FOLLOWING HARVESTING 102 - SEEDED FOLLOWING HARVESTING 103 - SCARIFIED 200 - SITE DRAINED 300 - THINNED 400 - FERTILIZED 500 - PRESCRIBED BURN 600 - PRUNED/TENDED 700 - WEEDED 800 - PEST CONTROL 900 - OTHER (DESCRIBE IN COMMENTS)
F46	TREAT2	3	2ND TREATMENT APPLIED
F47	TREAT3	3	3RD TREATMENT APPLIED
F48	TREAT4	3	4TH TREATMENT APPLIED
F49	TREAT5	3	5TH TREATMENT APPLIED
F50	TREAT6	3	6TH TREATMENT APPLIED
F51	TREAT7	3	7TH TREATMENT APPLIED
F52	TREAT8	3	8TH TREATMENT APPLIED
F53	TREAT9	3	9TH TREATMENT APPLIED
F54	TREAT10	3	10TH TREATMENT APPLIED

MPC DATA-BASE CONTENTS AND STANDARD CODES
ASCII FILE: ARCH#1.TXT

NUMBER	FIELD	WIDTH	CONTENTS AND ACCEPTABLE CODES
F55	TDATE1	2	YEAR OF 1ST TREATMENT
F56	TDATE2	2	YEAR OF 2ND TREATMENT
F57	TDATE3	2	YEAR OF 3RD TREATMENT
F58	TDATE4	2	YEAR OF 4TH TREATMENT
F59	TDATE5	2	YEAR OF 5TH TREATMENT
F60	TDATE6	2	YEAR OF 6TH TREATMENT
F61	TDATE7	2	YEAR OF 7TH TREATMENT
F62	TDATE8	2	YEAR OF 8TH TREATMENT
F63	TDATE9	2	YEAR OF 9TH TREATMENT
F64	TDATE10	2	YEAR OF 10TH TREATMENT